



EXECUTIVE SUMMARY



Prevention, Policies and Priorities to Reduce the Impact of Malaria on U.S. Military Forces

DoD Malaria Stakeholder Meeting

24-25 August 2011

Malaria remains a significant force health protection issue and Service members contracting malaria continue to make headlines in the national news. The Medical Surveillance Monthly Report reports the greatest number of *P. falciparum* cases in the Department of Defense (DoD) since 2003 and malaria consistently ranks as the most important infectious disease threat to the U.S. military.^{1,2} Although progress has been noted in some areas (e.g. decline in *P. vivax* and malaria cases in Korea), malaria exposure in Afghanistan and Africa continue to put service members at risk. Despite known strategies to prevent malaria, prevention practices and protective measures are not uniformly implemented to avert disease in the DoD.

In August 2011, the Armed Forces Health Surveillance Center (AFHSC) hosted the 2011 DoD Malaria Stakeholder Meeting in Silver Spring, Maryland. Entitled **“Prevention, Policies and Priorities to Reduce the Impact of Malaria on U.S. Military Forces”**, this DoD Malaria Stakeholder meeting was co-sponsored with the Office of the Secretary of Defense/Health Affairs (OSD/HA Force Health Protection & Readiness) and the Joint Preventive Medicine Policy Group (JPMPG). Dr. George Taylor (Deputy, ASD FHP&R) welcomed and charged the more than 50 participants from across the Armed Forces, to find Tri-Service solutions to reduce the malaria burden in our DoD troops. With representation from the operational, public health, preventive medicine, infectious disease, entomology, pest management, training, and research communities, participating DoD organizations included OSD/HA; U.S. Combatant Commands (AFRICOM, CENTCOM, SOUTHCOM, PACOM, Socom); Armed Forces Pest Management Board (AFPMB); National Center for Medical Intelligence (NCMI); Walter Reed Army Institute of Research; Navy Medical Personnel, Training and Education Command; and the research & development, public health, and headquarters commands of the U.S. Army, Air Force, Navy, and Marine Corps.

This year’s DoD Malaria Stakeholder meeting was built upon the success and progress made from last year’s 2010 Inter-Agency Malaria Meeting that engaged subject matter experts from the DoD, Centers for Disease Control and Prevention, Department of State, Department of Homeland Security, and the Peace Corps. Significant discussions addressed the need to improve diagnostic testing, clinical algorithms, and medical provider training, and how these activities directly affect data quality, malaria surveillance, military readiness and patient care. Additionally, attendees identified the lack of compliance with malaria chemoprophylaxis and protective equipment—preventive measures known to be effective—as significant issues that warranted further discussion. Considerable dialogue had surrounded chemoprophylaxis options and policy, and the need for standardized malaria policy, education and training of DoD medical personnel including guidance on malaria diagnosis, prophylaxis and treatment.

The 1.5-day Malaria Stakeholder meeting included didactic lectures and expert panels from DoD and foreign military subject matter experts, followed by frank open discussions. To address the many issues identified during the 2010 Inter-Agency meeting, this meeting’s objectives were to:

- Provide an update regarding data and information sharing practices and continue to address gaps in surveillance, prevention and treatment programs;
- Address policy issues regarding malaria chemoprophylaxis;
- Delineate malaria-specific requirements and strategies for COCOM support; and
- Begin collaborations for development of clinical decision support tools and laboratory diagnostic support.

Setting the stage for this venue was an account of the preventive medicine experience from Operation Unified Response. In the aftermath of the

Haiti earthquake, deployed personnel failed to take malaria chemoprophylaxis as prescribed, arrived with limited supplies and protective equipment, often didn't take the necessary precautions for vector control or avoidance, and had poor comprehension of the disease threat. This poignant vignette highlighted the persistent need for leadership oversight and accountability, and the challenges in ensuring compliance with personal protective measures— including chemoprophylaxis regimens.

This stakeholder forum addressed topics particularly relevant to DoD to include: COCOM requirements and priorities, malaria chemoprophylaxis, malaria diagnostics and microscopy, malaria resources and knowledge management, personal protective measures compliance, pest management developments, and military-military engagements. Breakout sessions were leveraged to maximize productivity and to ensure actionable strategies and specific deliverables. Breakout sessions focused on:

- 1) **Malaria Chemoprophylaxis:** A draft policy was presented for review and discussion which proposed: Malarone® as the drug of choice for high-transmission settings; Malarone® or doxycycline as drugs of choice for low-transmission settings; Malarone® as the preferred chemoprophylaxis agent for short-term deployments; directly observed therapy in high-risk environments; and NCMI as the resource to determine risk categories. Tremendous discussion was generated, and although there were differing opinions, the majority of individuals agreed with the policy's tenets.
- 2) **Malaria Microscopy and Training:** Standardizing malaria diagnostic slidesets and support materials for incorporation into the training curriculum was deemed to be of substantial benefit to medical techs/corpsstaff, junior physicians, infectious disease specialists, and foreign partners.
- 3) **Personal Protective Measures (PPM) Compliance:** Troop PPM non-compliance was attributed to the lack of risk appreciation. The lack of leadership and perceived threat by line commanders was identified as among the major obstacles to enforcing PPM policies and practices.

- 4) **Malaria Resources and Knowledge Management:** Consensus was reached that services should share existing malaria resources, collaborate to create new resources and coordinate to archive resources in a common location. It was agreed that training materials were needed for troops, line leadership, deployed medical personnel, and all echelons of healthcare providers— with the designated priority being a malaria clinical practice guideline and diagnostic algorithm.

As a direct result of this 2011 Malaria Stakeholder meeting, AFRICOM immediately enacted a new chemoprophylaxis policy; a draft Health Affairs policy for malaria chemoprophylaxis was vetted to JPMPG for their deliberation; overseas laboratories agreed to work with training and education commands to improve malaria microscopy slide sets and training; the Armed Forces Infectious Disease Society agreed to create a malaria clinical practice guideline and diagnostic algorithm; and the Armed Forces Pest Management Board is pursuing better educational materials and products to improve compliance with personal protective measures along with integrating PPM fundamentals into senior leadership curricula. Future efforts also include the inventory and archival of DoD malaria resources in a common location by the Services.

NEXT STEPS: All of the respondents completing a post-meeting evaluation considered the symposium a valuable forum and very relevant to DoD force health protection issues. Attendees were enthusiastic about the progress made at this meeting; strategies were outlined for each of the topics, with stakeholders agreeing to continue working independently to capitalize upon the momentum generated. Issues identified for future discussion include improving the availability and validity of rapid diagnostic tests (with AFRICOM as the primary proponent) and addressing the ambiguities associated with primaquine policy and use.

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¹ AFHSC. Update: Malaria, US Armed Forces 2010. MSMR 2011; 18(1):2-6.

² Burnette et al. Infectious diseases investment decision evaluation algorithm: a quantitative algorithm for prioritization of naturally occurring infectious disease threats to the U.S. military. Mil Med 2008; 173(2):174-81.